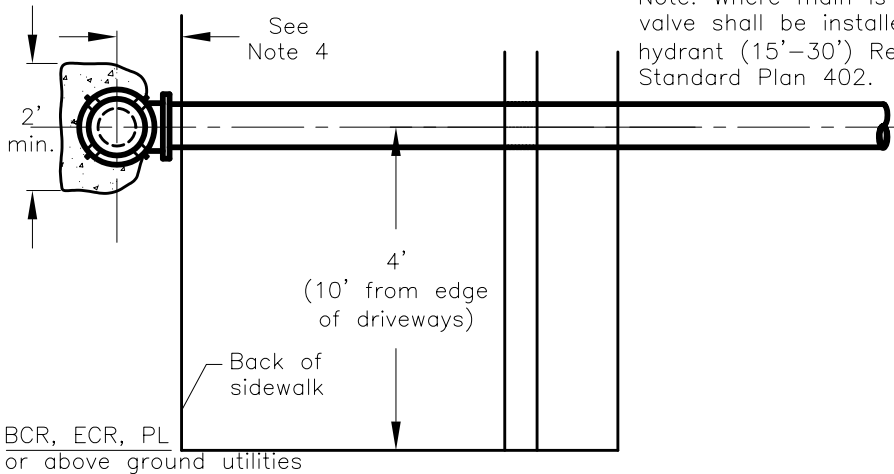




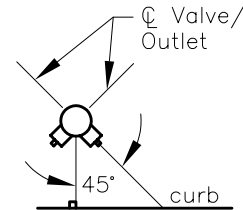
CITY OF LODI

PUBLIC WORKS DEPARTMENT

Fire Hydrant Installation

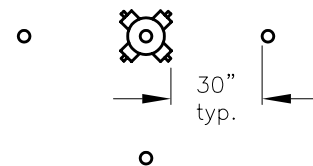
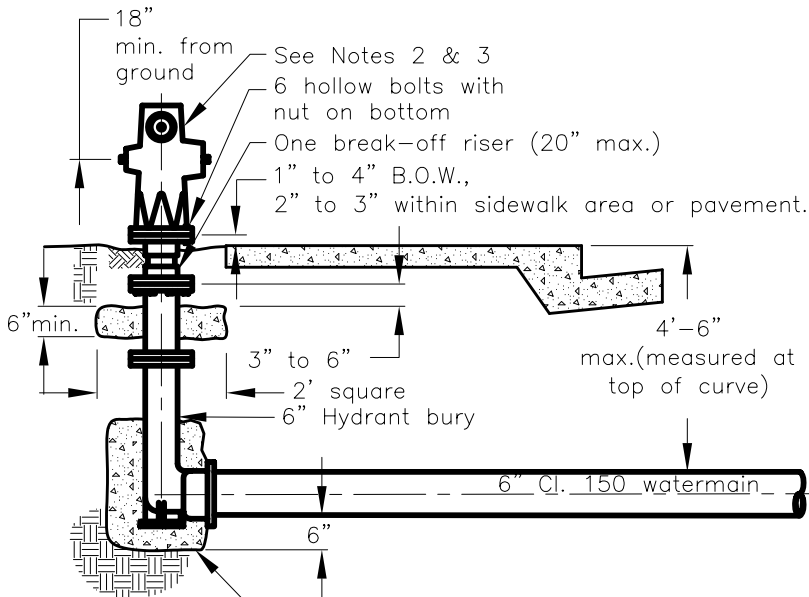


Note: Where main is over 150' from hydrant a second valve shall be installed in-line in the vicinity of the hydrant (15'-30') Refer to water valve installation Standard Plan 402.

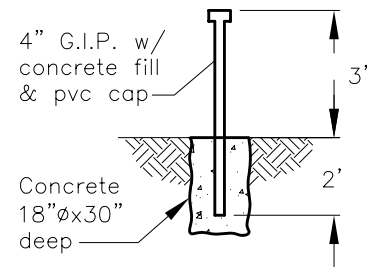


Hydrant Orientation

Post-# & location as directed by the Engineer



Guard Post Location Detail



Guard Post Construction Detail

See Note #5

Notes:

Refer to Standard Plan 405 for Thrust block requirements

- All work and material shall conform to City of Lodi Construction Specifications.
- Hydrants shall be painted Federal Yellow at the factory and furnished with National Standard Hose Thread outlets and cast iron caps.
- All Hydrants 1 4-1/2" outlet & 1 2-1/2" outlet; with fusion epoxy coated interior. Long Beach 425; Clow 950; AVK 24/70; Jones 4040.
- Locate C/L of hydrant per the following:
1.5' behind walk where F.O.C. to B.O.W. distance is 7.0' or less.
2.5' behind F.O.C. where F.O.C. to B.O.W. distance is greater than 7.0'
5' behind F.O.C. in planters.
- Install guard posts where hydrants are installed in paved areas accessible to traffic or in planters where hydrant is less than 3' behind the curb or when directed by the City.
- For trench backfill requirement, See Standard Plan 501.

Dr.	KT	No.	Date	Revision	Appr.
		1	9/25	ADJUSTED DIMENSION FROM PL	
Ch.	WS	2	2/04	REVISED AVK MODEL NUMBER	
Date	12/00				

Approved By: *F. Wally Sandelin* 2/12/04
F. Wally Sandelin
City Engineer
R.C.E. 39895
Date

STD PLAN

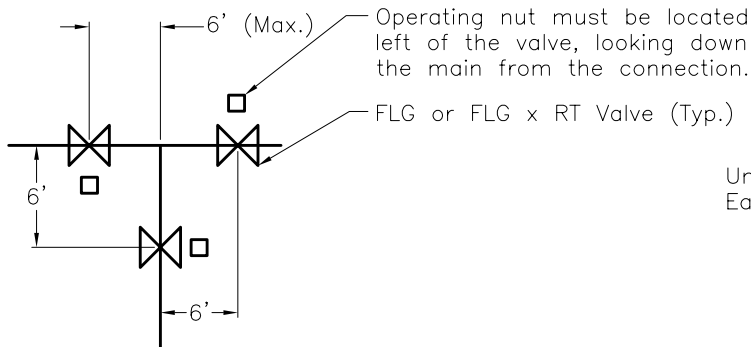
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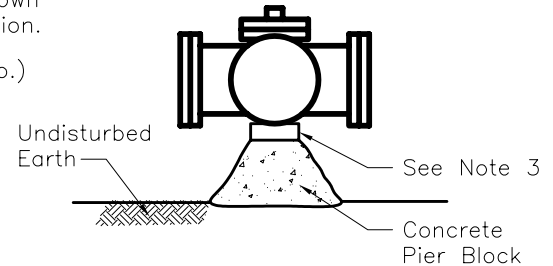
CITY OF LODI

PUBLIC WORKS DEPARTMENT

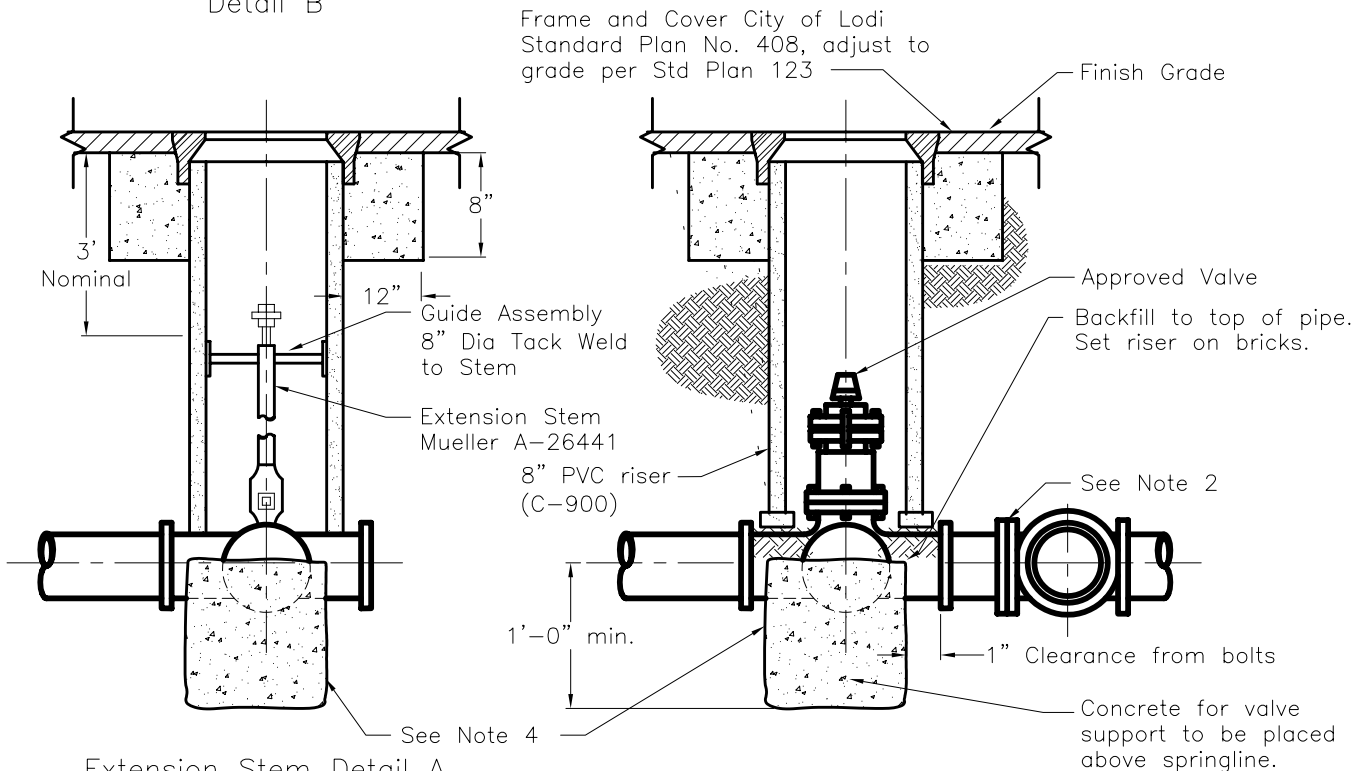
Water Valve Installation



Flanged Installation
Detail B



Hot Tap Valve Support
Detail C



Extension Stem Detail A
See Note 1

Notes:

1. Install extension stem when distance from valve cover to operating nut is greater than 12 feet; 3' max. nominal cover per Detail A.
2. Flanged fittings shall be used where lines are to be extended at a later date or as shown on the improvement plans. Operating nuts on flanged valves must be arranged per Detail B.
3. Concrete blocks may be used for valve and riser support; thrust blocks per Standard Plan 405. For Hot Tap Valve support refer to Detail C.
4. Place Visqueen around valves before placement of concrete supports.
5. For trench backfill, See Standard Plan 501.

Sheet 1 of 2

Dr. KT	No.	Date	Revision	Appr.	Approved By:	12/28/00	STD PLAN
Ch. WS					<i>F. Wally Sandelin</i>	Date	402
Date 12/00					F. Wally Sandelin City Engineer R.C.E. 39895		



CITY OF LODI

PUBLIC WORKS DEPARTMENT

Water Valve Installation Materials List

All Water Valves & Materials shall be Class 150B with 2" square operating nuts, open left (clockwise to close) and shall conform to AWWA Standard C-504 for Rubber Seated Butterfly Valves and City of Lodi Construction Specs 6-7602.

AWWA Approved Valves:

Mueller RS and Butterfly
M+H/Clow/Kennedy RS and Butterfly
American Darling RS Gate valves
Waterous RS Gate valve
AVK RS Gate valves

Sheet 2 of 2

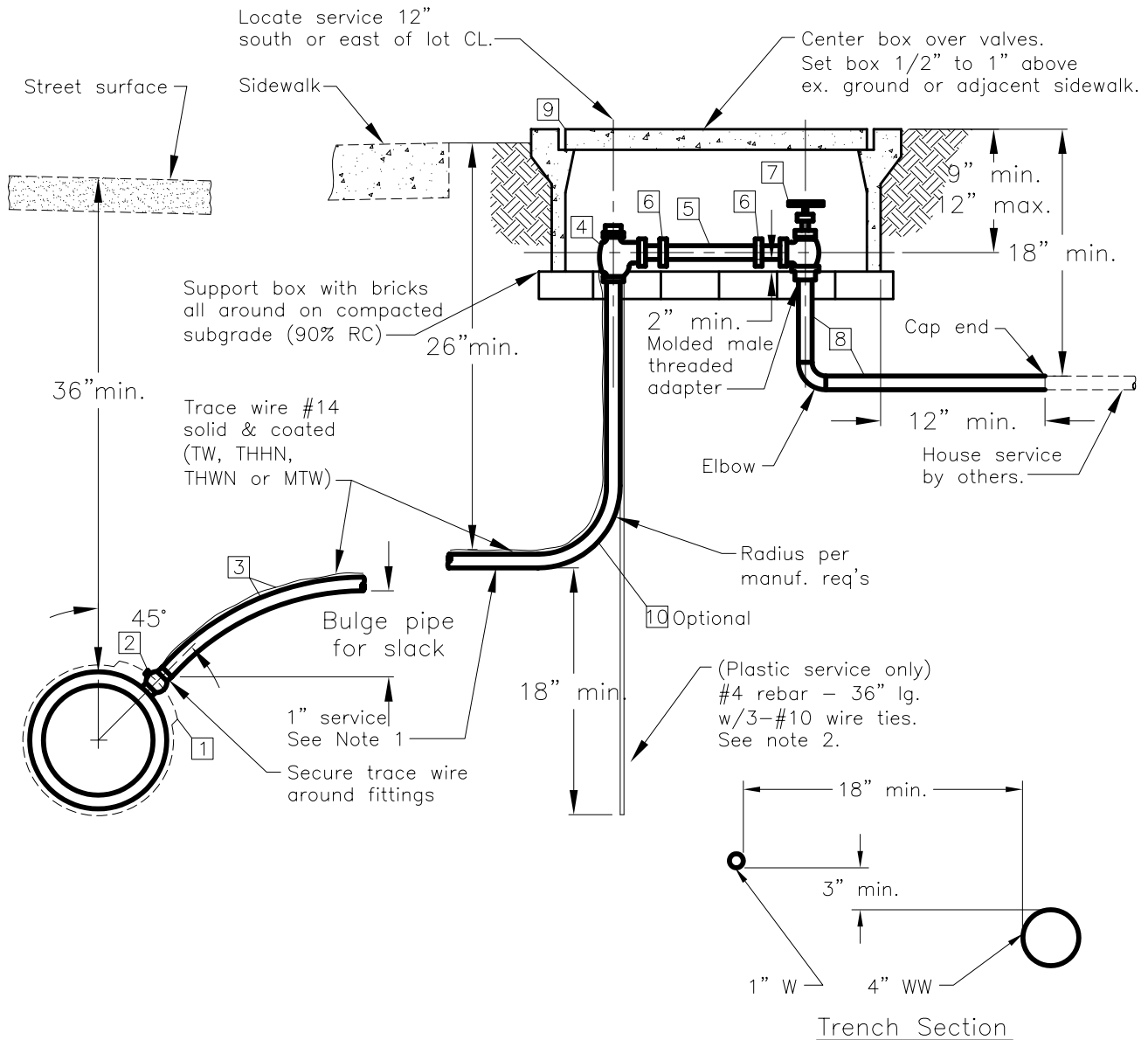
Dr. KT	No.	Date	Revision	Appr.	Approved By:		STD PLAN
Ch. WS					<i>F. Wally Sandelin</i>	12/28/00	402
Date 12/00					F. Wally Sandelin City Engineer R.C.E. 39895	Date	



CITY OF LODI

PUBLIC WORKS DEPARTMENT

1" Water Service



Notes:

1. Maintain 24" clearance between tap and any coupling, fitting or adjacent tap. Plastic services shall be looped approximately 6" vertically or laterally to provide slack in the line. If the service is installed in the same trench as the sanitary service, the water service shall be installed without splices and the trench section shown applies.
2. Backfill shall conform to Std. Plan 501.

Sheet 1 of 4

Dr. KT	No. 1	Date 9/25	Revision ADDED SECOND ITEM #6 & MADE ITEM #10 OPTIONAL	Appr.	Approved By: <i>F. Wally Sandelin</i>	Date 9/25/02	STD PLAN
Ch. WS					F. Wally Sandelin City Engineer R.C.E. 39895		403
Date 12/00							



CITY OF LODI

PUBLIC WORKS DEPARTMENT

1" Water Service Materials List

Fitting (a.)	Size	Basic Feature	Inlet Connection	Outlet Connection	Manufacturer's Nos.
Saddles [1]	1"	For C1-AC & Ductile Iron Pipe Ductile Iron Double Strap Saddle <u>No Single Strap Saddles</u>		IPT	Rockwell 313 Apac 102 Other manufacturers with similar designs o.k.
Saddles	1"	For C900 Pipe		IPT	Romac 101S Mueller H1349
Corp. Stop [2]	1"	Ground Key or ball valve	1" cc threads for C1 AC pipe	1" CTS PE Mueller Instatite	Mueller H-15006 or Mueller H-1500 with H15074 J1500 1" with H15074 1" F600 Ford with H15074
Corp. Stop	1"	Ground Key or ball valve	Saddle C1 AC C-900 Pipe 1" IPT	1" PJ for PE CTS	All PJ must have inserts 1" Ford FB1100 with Ins. #52 1" J-3403 with Insert J2805 1" Mueller H15028 with insert H504385 1" FB500 with C14-44 adapter with insert J41 with J2607 adapter with insert
Corp. Stop	1"	Ground Key or ball valve	1" cc threads C1 and AC Pipe	1" PJ for PE CTS	Mueller H15008 with insert H504385 Ford FB1000 with Ins. #52 J3401 with insert J2805
Service Pipe [3]	1"				C.T.S. PE 3408 CL. 160 with Trace Wire
Angle Stop [4]	1"	Ground Key or Ball Valve with Lockwing	1" PE CTS Mueller Instatite	1" Straight Thread Swivel Nut	Mueller H14267
Angle Stop	1"	Ground Key or Ball Valve with Lockwing	1" PE CTS Compression	1" Straight Thread Swivel Nut	Mueller H14258 with Insert H504385

Sheet 2 of 4

Dr. KT	No. 1	Date 9/25	Revision	Appr.	Approved By:	STD PLAN
Ch. WS			ADDED SECOND ITEM #6 & MADE ITEM #10 OPTIONAL		<i>F. Wally Sandelin</i>	
Date 12/00					F. Wally Sandelin City Engineer R.C.E. 39895	9/25/02 Date
						403



CITY OF LODI

PUBLIC WORKS DEPARTMENT

1" Water Service Materials List

Fitting (a.)	Size	Basic Feature	Inlet Connection	Outlet Connection	Manufacturer's Nos.
Angle Stop	1"	Ground Key or Ball Valve with Lockwing	1" PE CTS PJ	1" Straight Thread Swivel Nut	J-4201 with Insert J2805 Ford KV 43-342W with Insert
Spacer [5]	1"	Schedule 80 PVC 9" long with rubber or leather washer	1" IPT	1" IPT	1" v 9" Sch. 80 PVC IPT Mueller H10887
Coupling [6]	1"	Bronze or Brass coupling and bushing to adapt spacer to customer valve - Bushing may be at either end of coupling depending on size of coupling order	1" Straight Thread swivel Nut	1" IPT	Mueller H10891, H10890, H1089_ or H10897 with 3/4" x 1" brass bushing Jones J-134 or J130 with 3/4" x 1" brass bushing Ford C-38-24-2.625
Customer Valve [7]	1"	Brass or bronze Angle Globe Valve with Handwheel All valves must have brass handles	IPT	IPT	Mueller 8130 Stockham B-216 Nibco T-311-Y
Customer Stub [8]	1"				IPS PVC Schedule 40 per Uniform Plumbing Code. (Same size as service pipe)

Sheet 3 of 4

Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS	1	9/25	ADDED SECOND ITEM #6 & MADE ITEM #10 OPTIONAL		<i>F. Wally Sandelin</i>	403
Date 12/00					F. Wally Sandelin City Engineer R.C.E. 39895	9/25/02 Date



CITY OF LODI

PUBLIC WORKS DEPARTMENT

1" Water Service Materials List

Fitting (a)	Size	Basic Feature	Inlet Connection	Outlet Connection	Manufacturer's Nos.
Service Box 9		All lids to read Water			Christy FL30 Box 12 (1" Backyard service easements only) Christy FL30D lid (1" Backyard service easements only) Christy N16 or Bes C16E Box Christy B16D or Bes D30 Lid (Grass Areas, Flush Fit foot traffic only) Christy B16C or Bes C30 Lid (Flush Fit Driveways, Sidewalks) Christy B16-61D or Bes 61D30 Lid (3/16" steel checker Flush Fit Driveways, Sidewalk)
90° PJ Elbow 10	1"		1" PJ CTS	1" PJ CTS	1" Ford L44-44 with Insert

a. Alternative fittings must be approved by the City Engineer.

Sheet 4 of 4

Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS	1	9/25	ADDED SECOND ITEM #6 & MADE ITEM #10 OPTIONAL		<i>F. Wally Sandelin</i>	403
Date 12/00					F. Wally Sandelin City Engineer R.C.E. 39895	9/25/02 Date



Water Blow-off
Permanent



1. No services within 3' of blow-off.

Sheet 1 of 2

Dr. KT	No. 1	Date 9/25	Revision REVISÉ APPROVÉ BALL VALVE	Appr.	Approved By: <i>F. Wally Sandelin</i>	STD PLAN 404
Ch. WS					9/25/02	
Date 12/00					Date	



CITY OF LODI

PUBLIC WORKS DEPARTMENT

Water Blow-off Permanent Material List

Material List for Standard Plan 404

City Approved Ball Valves

Flow-Teck's Forged Brass Ball Valve Model S50
Matco-Norca, Inc. Model 752 or
Watts Model 75-0211

City Approved Boxes

Box Bes C-36W or Christy B-36 or
Christy B-17 x 30

Sheet 2 of 2

Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS	1	9/25	REVISED APPROVED BALL VALVE		<i>F. Wally Sandelin</i>	404
Date 12/00					F. Wally Sandelin City Engineer R.C.E. 39895	9/25/02 Date

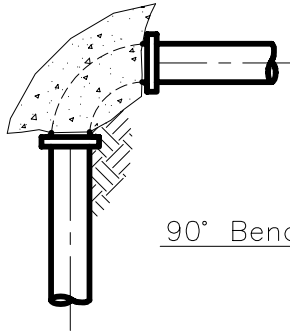


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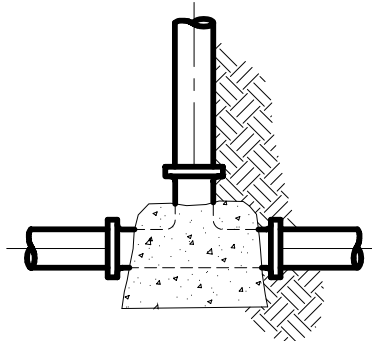
PUBLIC WORKS DEPARTMENT

Thrust Block Requirements

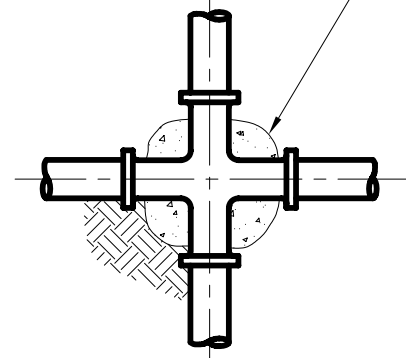
No thrusting on cross except where ends are plugged.



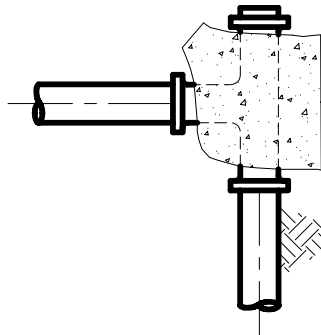
90° Bend



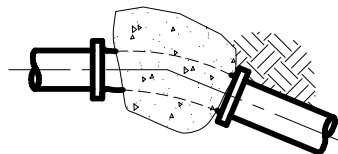
Tee



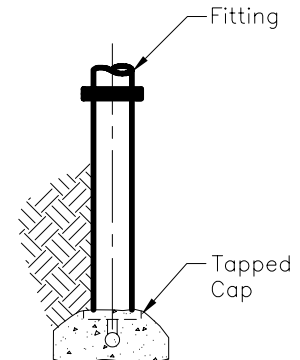
Cross



Plugged Tee

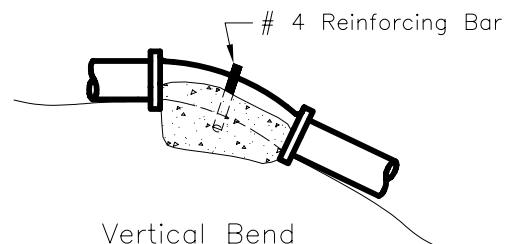


45° or 22½°
Horizontal Bend



Blow off

Minimum Thrust Block Bearing Areas In Square Feet				
Pipe Sizes	90°	45°	22½°	Tees & Blow Off
6"	3	2	2	2
8"	4	3	2	3
10"	6	4	3	4
12"	8	5	3	6
14"	12	7	4	8



Vertical Bend

Notes:

1. Concrete shall be 2000 PSI minimum at 28 days.
2. Thrust blocks shall be placed against undisturbed earth.
3. All fittings shall be supported in concrete.
4. For fire hydrant thrusting see Std. Plan 401.
5. Don't cover flange bolts with concrete.
6. Mechanically restrained joints as required by the City. See Material List Page 2.
7. Wrap all fittings and flanges with Visqueen.

Sheet 1 of 2

Dr. KT	No.	Date	Revision	Appr.	Approved By:		STD PLAN
Ch. WS	1	9/25	ADDED NOTE #7		<i>F. Wally Sandelin</i>	9/25/02	405
Date 12/00					F. Wally Sandelin City Engineer R.C.E. 39895	Date	



CITY OF LODI

PUBLIC WORKS DEPARTMENT

Thrust Block Requirements Material List

Material List for Standard Plan 405

City Approved Mechanical Restrained Joints

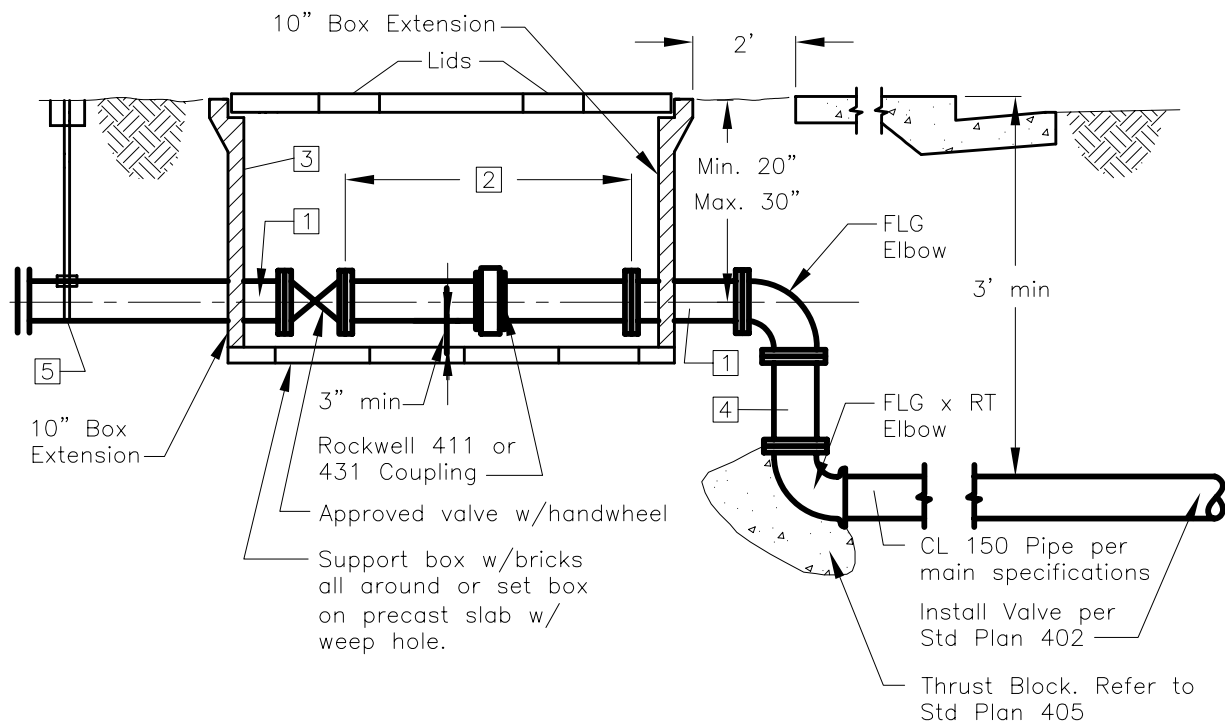
Pipe Material	Joint
Ductile Iron	Mega-Lug 1100
C900PVC	Mega-Lug 2000
IPS PVC	Mega-Lug 2000
PVC Bell and Spicket	Mega-Lug 1600

Sheet 2 of 2

Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS	1	9/25	ADDED NOTE #7		<i>F. Wally Sandelin</i>	405
Date					F. Wally Sandelin City Engineer R.C.E. 39895	9/25/02 Date
12/00						



Domestic Water Service
(3", 4", 6" & 8")



1. Meter (if required) will be furnished and installed by City.
2. Bypass may be installed with the specific approval of the Public Works Director.
3. Plug all openings in box.
4. Backfill shall conform to Std Plan 501.

Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS					<i>F. Wally Sandelin</i> 12/28/00	406
Date 12/00					F. Wally Sandelin City Engineer R.C.E. 39895 Date	



CITY OF LODI

PUBLIC WORKS DEPARTMENT

Domestic Water Service (3", 4", 6" & 8") Materials List

- [1] FLG Spool, 24" long (2 ea) (C.I., D.I., or steel)
- [2] FLG x Plain end spool (2 ea) Leave 1" gap at coupling
- 3" - 15" long
 - 4" - 15" long
 - 6" - 20" long
 - 8" - 20" long
- ends of spools
(C.I. or steel)

Christy or Bes Box	Lid (Traffic)		Box Extension
	Christy	Bes	
3"+4" B-48 or C48W	B48-62D	62D85	10" Box Extension B48 x 10
6"+8" B-52 or C52W	B52-62D	62D90	10" Box Extension B52 x 10

- [4] FLG Spool, lengths as needed (optional) (C.I., D.I., or steel)
- [5] Temporary Blowoff per Std Plan 409. 2" for 4"-6" service,
4" for 8" and larger service.

All fittings shall be cast or ductile iron or steel (as noted) and shall conform to applicable AWWA Standards. (Sch. 40, 150 lb. FLG)

Traffic Lids shall be used in all location.

Sheet 2 of 2

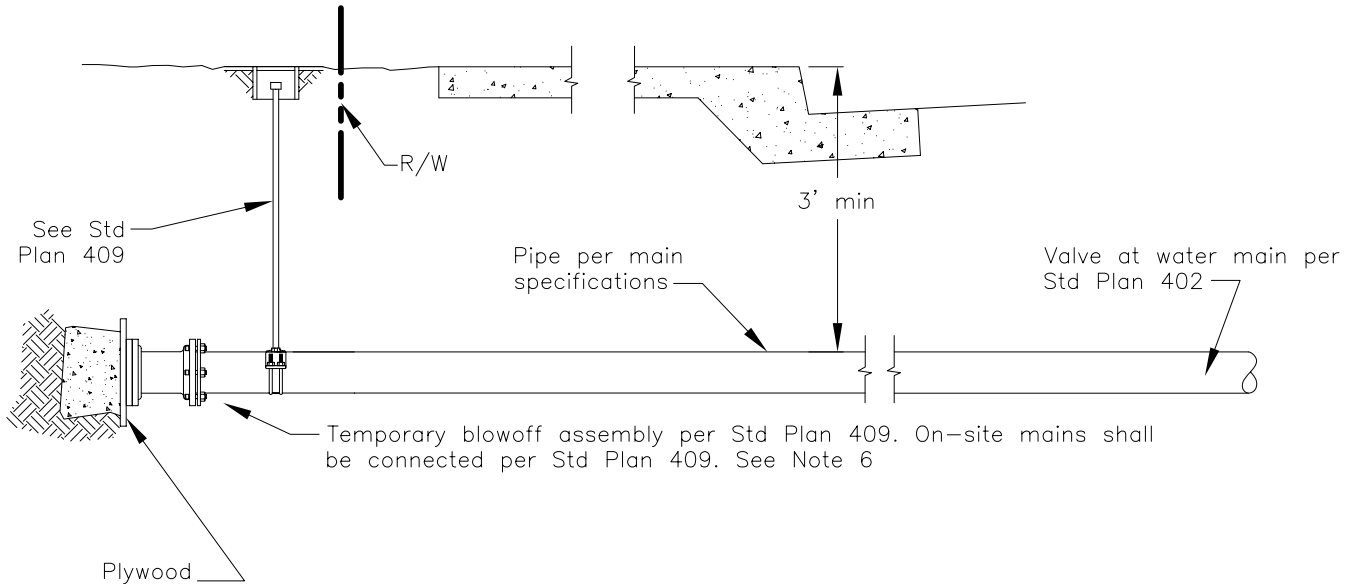
Dr. KT	No.	Date	Revision	Appr.	Approved By:		STD PLAN
Ch. WS					<i>F. Wally Sandelin</i>	12/28/00	406
Date 12/00					F. Wally Sandelin City Engineer R.C.E. 39895	Date	



CITY OF LODI

PUBLIC WORKS DEPARTMENT

Fire Service



4" & Larger Service

Notes:

1. If not alarmed a detector check valve w/bypass meter shall be installed at fire-sprinkler system connection only. Installation details shall conform to Fire Dept. and Bldg. Dept. requirements. (See Detail A)
2. On-site fire mains shall be completely isolated from domestic lines.
3. On-site fire mains looped to the City system must be specifically approved by the Public Works Director and must be equipped with double check valve assemblies at each connection. In such cases the services shall be installed per Std. Plan 406 with the Double Check Valve assemblies installed in an appropriately sized box at the property line.
4. Suitable backflow prevention devices will be required for fire systems having auxiliary sources of supply, elevated tanks or chemical additives, or other special conditions.
5. Sufficient valves shall be provided to separate sprinkler, hydrant and domestic systems. Additional main line valves may be required depending on the complexity of the on-site system.
6. Pressure and bacteriological tests per City of Lodi Construction Specifications are required for on-site systems unless waived by the Public Works Director.
7. Systems with booster pumps shall be equipped with a pressure sustaining valve to the approval of the Public Works Director.

Sheet 1 of 2

Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
	1	9/25	REVISED F.D.C. LOCATION		<i>F. Wally Sandelin</i>	407
Ch. WS	2	2/04	REVISED TEMP. BLOW OFF VALVE		F. Wally Sandelin City Engineer R.C.E. 39895	
Date 12/00					2/12/04 Date	

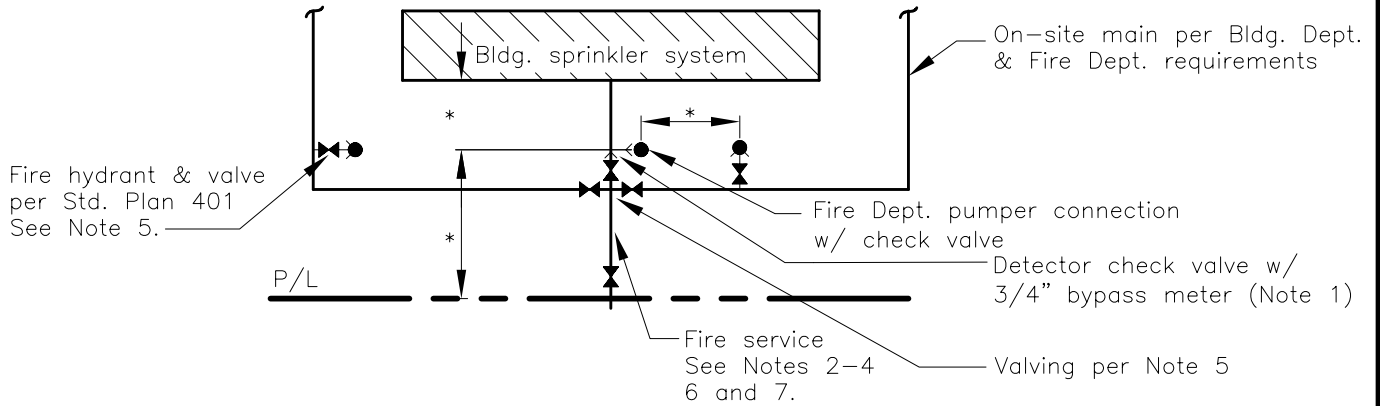


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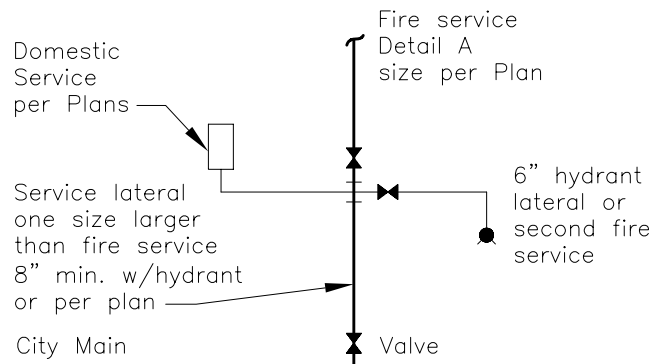
PUBLIC WORKS DEPARTMENT

Fire Service

* Locations of hydrants, Fire Dept. connections & detector checks to be determined by the Fire Marshal.



Detail A
Fire Service



Detail B
Combined Fire/Domestic Service

Sheet 2 of 2

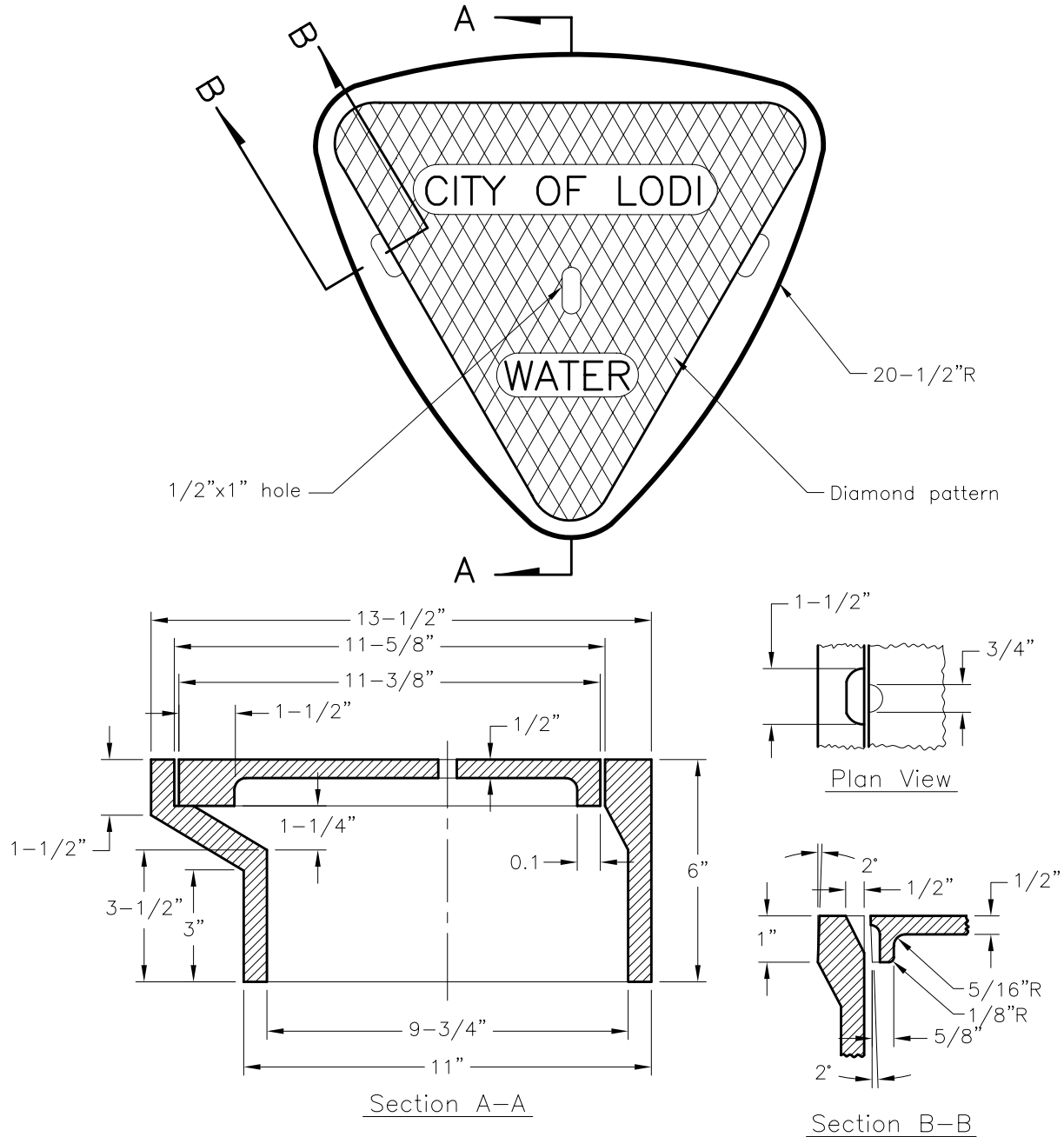
Dr. KT	No. 1	Date 9/25	Revision REVISED F.D.C. LOCATION	Appr.	Approved By: <i>F. Wally Sandelin</i>	STD PLAN
Ch. WS					F. Wally Sandelin City Engineer R.C.E. 39895	407
Date 12/00					9/25/02 Date	



CITY OF LODI

PUBLIC WORKS DEPARTMENT

Water Valve Frame & Cover



Notes:

1. Frame - Wt 50 Lbs.
2. Cover - Wt 16 Lbs.
3. Material - Cast Iron

Dr. KT	No.	Date	Revision	Appr.	Approved By:	12/28/00	STD PLAN
Ch. WS					<i>F. Wally Sandelin</i>	Date	408
Date 12/00					F. Wally Sandelin City Engineer R.C.E. 39895		



409



CITY OF LODI

PUBLIC WORKS DEPARTMENT

Temporary Water Blow-off and Connection Details Materials List

Fittings Legend:

- ① Flanged Reducer (Furnished by the Contractor)
- ② Meter with Strainer
- ③ Check Valve
- ④ Butterfly Valve
- ⑤ Removable Steel Plate.
- ⑥ Double Strap Malleable Iron Saddle
- ⑦ Adapter MJ/FLG, Full face flange only.
(Furnished by the Contractor)
- ⑧ Blind Flange
- ⑨ 6" Flg x Flg spool w/ 2" tapped fitting

Sheet 2 of 2

Dr. KT	No.	Date	Revision	Appr.	Approved By:	
Ch. WS	1	9/25	REDRAWN		<i>F. Wally Sangelin</i>	9/25/02
Date 12/00					F. Wally Sangelin City Engineer R.C.E. 39895	Date

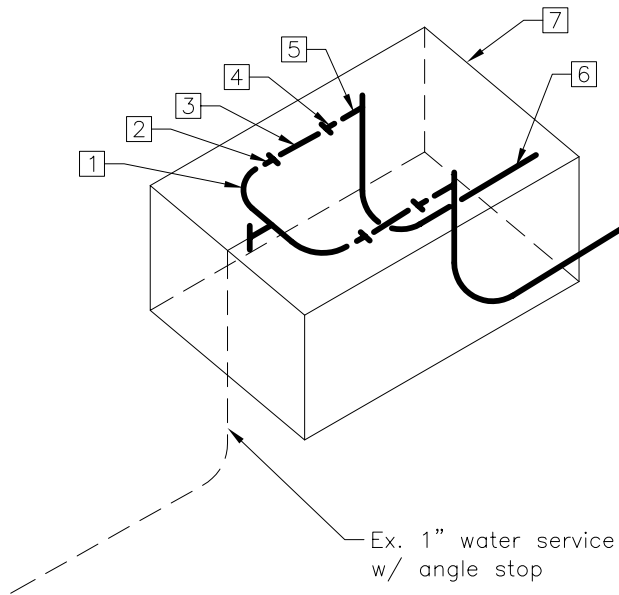
STD PLAN
409



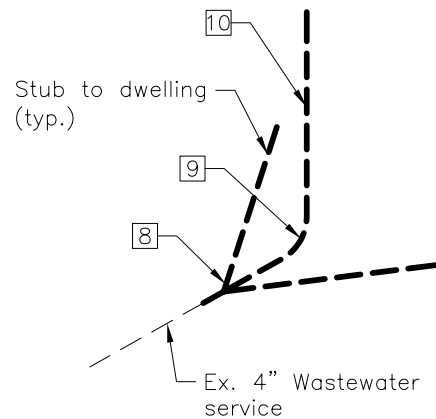
CITY OF LODI

PUBLIC WORKS DEPARTMENT

Water & Wastewater Service Modification



Water Service



Wastewater Service

Notes:

1. This standard plan to be used for modification of existing Water and Wastewater services to lots being split for construction of zero lot line dwellings or where two services are sharing a tap.
2. See Std Plan 403 for water service details.
3. Wastewater materials to be ESVCP ASTM C-700, PVC ASTM D3034 SDR 35 or ABS ASTM D-2751
4. Locate service box and clean-out as close as possible to Property Line.

Sheet 1 of 2

Dr. KT	No.	Date	Revision	Appr.	Approved By:		STD PLAN
Ch. WS					<i>F. Wally Sandelin</i>	12/28/00	410
Date 12/00					F. Wally Sandelin City Engineer R.C.E. 39895	Date	



CITY OF LODI

PUBLIC WORKS DEPARTMENT

Water & Wastewater Service Modification Materials List

Legend:

- 1 Mueller H-15364 U-Branch Connection 1" inlet 8" center to center. 3/4" outlet
- 2 Mueller H-14215 Meter Coupling catalog size 5/8"x3/4"x3/4".
- 3 9" lg. spacer per Std Plan 403
- 4 Mueller H-10890 Coupling.
- 5 3/4" Customer Valve-Stockham B-216, Mueller 8130, Nibco T-311-Y.
- 6 3/4" Sch. 40 PVC Stub.
- 7 Christy B-36 box per Std Plan 412
- 8 4" Double Wye or 2-4" Wyes in-line.
- 9 4"-90° Elbow (long bend)
- 10 Cleanout per Std Plan 201

Sheet 2 of 2

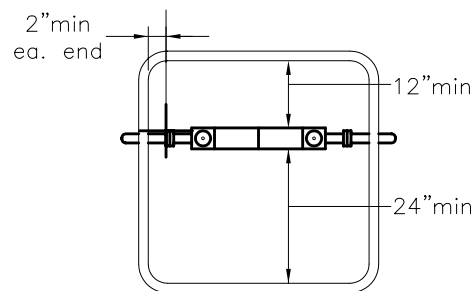
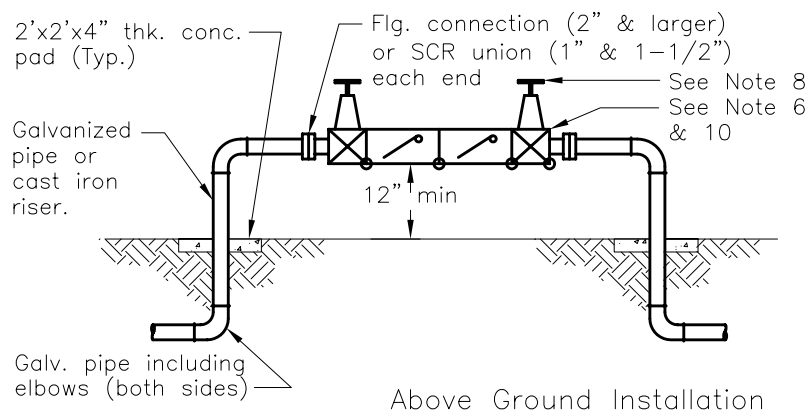
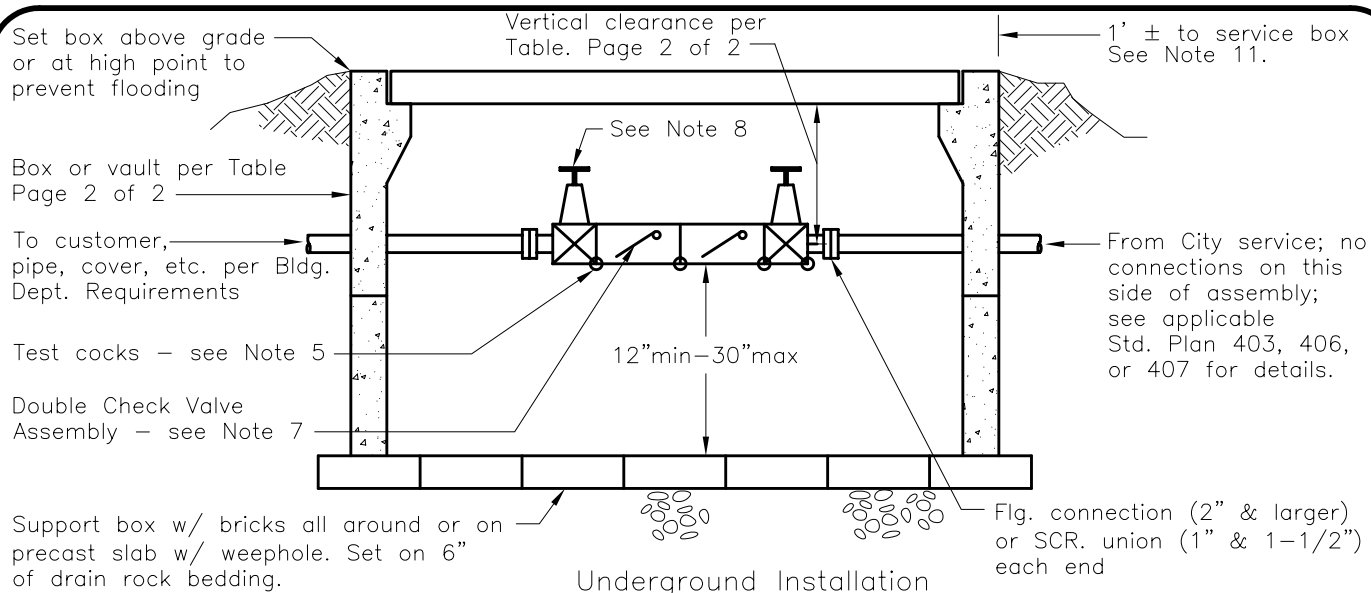
Dr. KT	No.	Date	Revision	Appr.	Approved By:		STD PLAN
Ch. WS					<i>F. Wally Sandelin</i>	12/28/00	410
Date 12/00					F. Wally Sandelin City Engineer R.C.E. 39895	Date	



CITY OF LODI

PUBLIC WORKS DEPARTMENT

Double Check Valve Assembly



Notes:

1. It is the customer's responsibility to have the assembly tested prior to acceptance and annually by a State Certified Backflow Prevention Tester and report the results to the Public Works Department.
2. Plug all openings in box.
3. Traffic lids shall be used where applicable.
4. Vertical clearance may be increased for OS&Y valves.
5. Offset box over assembly to provide testing clearance per plan.
6. Assembly installed above ground may be enclosed with clearances similar to underground installation.
7. Use FEBCO 850 or approved equal per State Standards.
8. Valve handles may be chained & padlocked for security.
9. This plan for domestic service only. Design for fire service applications to have approval of Public Works Director and Fire Marshal.
10. Install guard posts where device is installed in paved areas accessible to traffic or in planters less than 3' behind the curb or when directed by City.
11. Locate immediately downstream of water service box.

Sheet 1 of 2

Dr. KT	No. 1	Date 2/04	Revision REVISED MODEL NUMBER	Appr.	Approved By: <i>F. Wally Sandelin</i>	2/12/04	STD PLAN
Ch. WS			ON NOTE #7		F. Wally Sandelin City Engineer R.C.E. 39895	Date	411
Date 12/00							



CITY OF LODI

PUBLIC WORKS DEPARTMENT

Double Check Valve Assembly Materials List

Size	Vertical Clearance min / max		Box or Vault / Lid (See Note 3) (min)
1"	8"	18"	Christy B40 or Bes C40W Box/ Christy B40-61D or Bes 61D75
1-1/2"	10"	20"	Christy B48 or Bes C48W Box/ Christy B48-62D or Bes 62D85
2"	10"	20"	Christy B48 or Bes C48W Box/ Christy B48-62D or Bes 62D85
3"	16"	30"	4'x4' / Split, hinged lid
4"	20"	36"	4'x4' / similar to Forni-
6"	24"	40"	7'x5' / HAL-Lucero
8"	30"	48"	7'x5' / Assembly

Christy B52 or Bes C52W box/
Christy or Bes 62D90

Sheet 2 of 2

Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS					M:\OPEN\PROJECTS\Seals&Sigs\Wallysign.tif	411
Date 12/00					F. Wally Sandelin City Engineer R.C.E. 39895	12/28/00 Date




1-1/2" & 2" Water
Service



1. Maintain 24" clearance between tap and any coupling, fitting or adjacent tap. Plastic services shall be installed with slack in the line. If the service is installed in the same trench as sanitary service, the water service shall be installed without splices and the trench section shown applies:
2. S.S. liners required on PE pipe fittings.
3. Backfill shall conform to Std Plan 501.

Sheet 1 of 4

Dr.	KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
		1	9/25	ADDED END CAP		 F. Wally Sandelin City Engineer R.C.E. 39895	<div>2/12/04</div> <div>Date</div> <div>412</div>
Ch.	WS	2	2/04	CHANGED ELBOW NOTATION			
Date	12/00						



CITY OF LODI

PUBLIC WORKS DEPARTMENT

1-1/2" & 2" Water Service Materials List

Fitting (a)	Size	Basic Feature	Inlet Connection	Outlet Connection	Manufacturer's Nos.
Saddles 1	1-1/2" & 2"	For C1-AC & Ductile Iron Pipe Ductile Iron Double Strap Saddle <u>No Single Strap Saddles</u>		IPT	Rockwell 313 Apac 102 Other manufacturers with similar designs o.k.
Saddles	1-1/2" & 2"	For C900 Pipe		IPT	Romac 101S Mueller H1349 with 1P thread
Corp. Stop 2	1-1/2"	Oriseal or Ball Valve	Saddle IPT 1-1/2" 1-1/2" IPT	1-1/2" PJ CTS	All PJ must have inserts 1-1/2" J1935 with insert J2805 1-1/2" FB1100 with insert 54 1-1/2" Mueller H15023 with insert 506139
Corp. Stop	1-1/2"	Oriseal or Ball valve	1-1/2" Saddle IPT 1-1/2" IPT	1-1/2" IPT	All PJ must have inserts 1-1/2" FB500 with C14-66 FIPT CTS PJ adapter with Insert 1-1/2" J1943, J2607 FIPT Adapter CTS with Insert 1-1/2" Mueller H9969 with H15451 CTS Adapter with Insert 506139
Corp. Stop	2"	Oriseal or Ball Valve	2" Saddle IPT 2" IPT	2" PJ CTS	All PJ must have inserts 2" J1935 with insert J2805 2" FB1100 with insert 55 2" Mueller H15023 with insert 506141
Corp. Stop	2"	Oriseal or Ball Valve	2" IPT	2" IPT	All PJ must have inserts 2" FB 500 with C14-77 IPT CTS Adapter with Insert 2" J1943 with J2607 with Insert 2" Mueller 9969 with H15451 CTS Adapter with insert 506141

Sheet 2 of 4

Dr. KT	No. 1	Date 9/25	Revision ADDED END CAP	Appr.	Approved By: <i>F. Wally Sandelin</i>	9/25/02	STD PLAN
Ch. WS					F. Wally Sandelin City Engineer R.C.E. 39895	Date	412
Date 12/00							



CITY OF LODI

PUBLIC WORKS DEPARTMENT

1-1/2" & 2" Water Service Materials List

Fitting (a)	Size	Basic Feature	Inlet Connection	Outlet Connection	Manufacturer's Nos.
Service Pipe [3]	1-1/2" & 2"				C.T.S. PE 3408 200 PSI SDR9 ASTM D-2737 Sch 80 PVC with trace wire, or Sch 40 GIP
Angle Stop [4]	1-1/2" & 2"	Ground Key or Ball Valve with Lockwing	PJ CTS	1-1/2" & 2" 2 hole meter flange	1-1/2" Ford FV 43-666W with Insert 2" Ford FV 43-777W with Insert J4205 with Insert 2" x 1-1/2" Mueller H14277 with Insert
Spacer [5]	1-1/2" & 2"	Bronze or Brass flanges meter x FIPT with Sch. 80 PVC Spacer 13" long for 1-1/2" Service 17" long for 2" Service	2 Hole Flg x FIPT	2 Hole Flg x FIPT	J129 1-1/2" Ford #6F Flg 2" Ford #7F Flg 2x16 Sch. 80 PVC IPT
Coupling [6]	1-1/2" & 2"	Flanged meter coupling adapter Malleable Iron	2 Hole Flg without ring	Compression coupling to fit 2" or 1-1/2" Sch. 80 Nipple	Rockwell 926 Meter Coupling with 4" Sch. 80 Nipple IPT x plan End
Customer Valve [7]	1-1/2" 2"	Brass or bronze Angle Globe Valve with Handwheel All valves must have brass handle	IPT	IPT	Nibco T-311-Y Stockham B-216 Mueller 8130
Customer Stub [8]	1-1/2" & 2"				IPS PVC Schedule 40 per Uniform Plumbing Code. (Same size as service pipe)

Sheet 3 of 4

Dr. KT	No. 1	Date 9/25	Revision ADDED END CAP	Appr.	Approved By: <i>F. Wally Sandelin</i>	9/25/02	STD PLAN
Ch. WS					F. Wally Sandelin City Engineer R.C.E. 39895	Date	412
Date 12/00							



CITY OF LODI

PUBLIC WORKS DEPARTMENT

1-1/2" & 2" Water Service Materials List

Fitting (a)	Size	Basic Feature	Inlet Connection	Outlet Connection	Manufacturer's Nos.
Service Box 9	1-1/2"	All Lids to read Water Holes in Lids for touch read Probe will be required if a meter is to be installed			Christy B36 or Bes C36W Box Christy B36D or Bes D70 Lid (Flush Fit foot Traffic, Grass Areas) Christy FI36D (Foot Traffic, Grass Areas, Flush fit) Christy B36-61D 1/4" Steel Checker Plate (Driveways, Sidewalks) Christy B1730 Full Vehicular Traffic Box
	2"	All Lids to read Water Holes in Lids for touch read Probe will be required if a meter is to be installed			Christy B40 or Bes C40W Box Christy B40-61D of Bes 61D75 Lid 1/4" Steel Plate Christy B24x36 Full Vehicular Traffic Box
90° PJ Elbow			1-1/2" OR 2" PJ CTS	1-1/2" OR 2" PJ CTS	1-1/2" Ford L44-46 with Insert Jones 1-1/2" J2611 with Insert 2" Ford L44-77 1-1/2", 2" Mueller H-15526 with Insert
90° Elbow 10			1-1/2" OR 2"	1-1/2" OR 2"	PVC

a. Alternate Fittings must be approved by the City Engineer.

Sheet 4 of 4

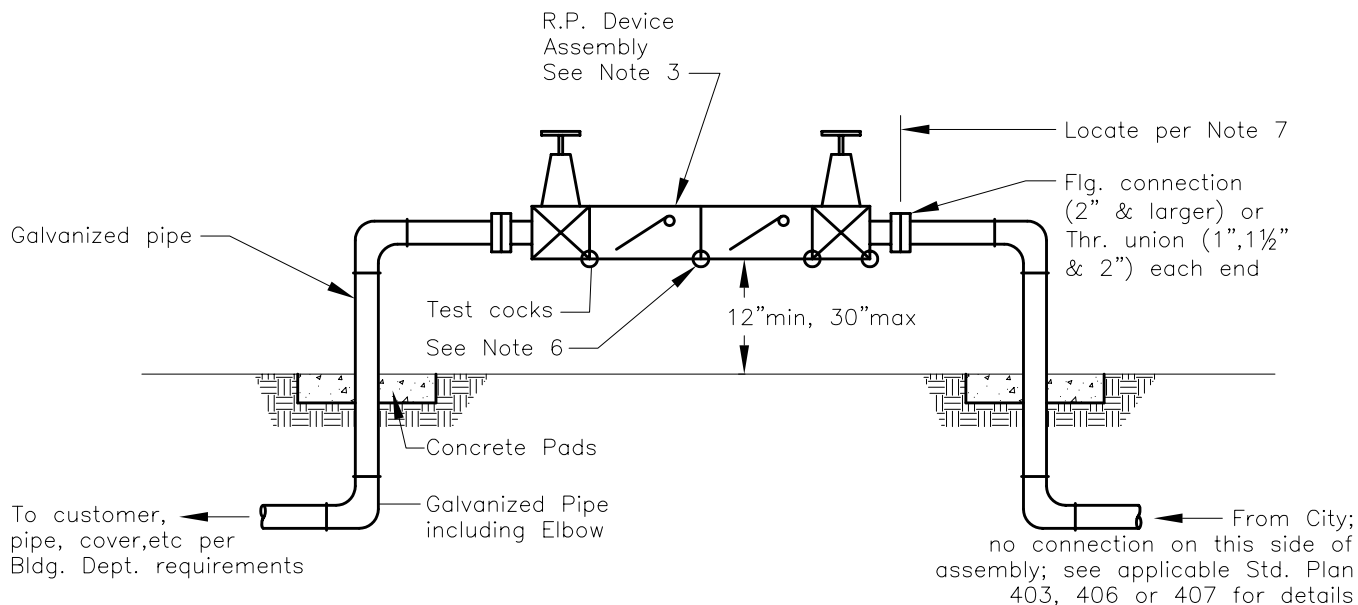
Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
	1	9/25	ADDED END CAP		<i>F. Wally Sandelin</i> F. Wally Sandelin City Engineer R.C.E. 39895	412
Ch. WS	2	2/04	ADDED PVC 90 ELBOW			
Date 12/00					2/12/04 Date	



CITY OF LODI

PUBLIC WORKS DEPARTMENT

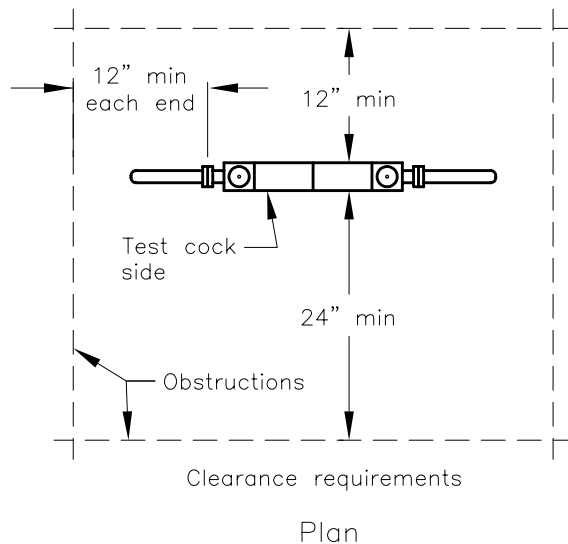
Reduced Pressure Backflow Device Assembly



Above Ground Installation

Notes:

1. It is the customers responsibility to have the assembly tested prior to acceptance and annually by a State Certified Backflow Prevention Tester and report the results to the Public Works Department.
2. Install guard posts where device is installed in paved areas accessible to traffic or in planters less than 3' behind the curb or when directed by City.
3. FEBCO 825Y or approved equal, must be on list of approved Backflow Prevention Assemblies Dept. of Health Services.
4. Valve handles may be chained & padlocked for security.
5. This plan for domestic service only. Design for fire service applications to have approval of Public Works Director and Fire Marshal.
6. Provide drainage (with air gap) for pressure relief discharge.
7. Locate assembly immediately down stream of service box.



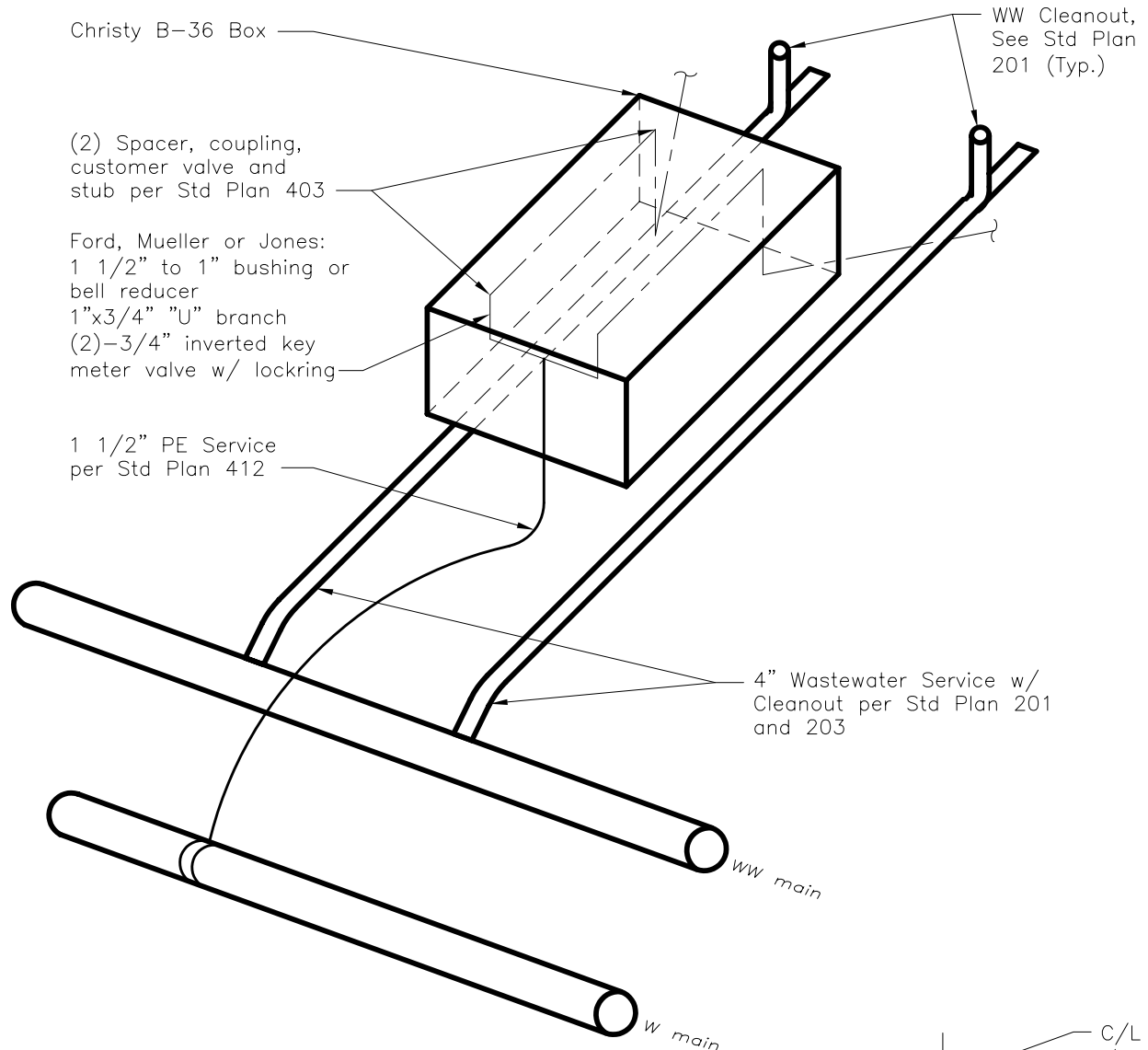
Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS					<i>F. Wally Sandelin</i>	413
Date 12/00					F. Wally Sandelin City Engineer R.C.E. 39895	12/28/00 Date



CITY OF LODI

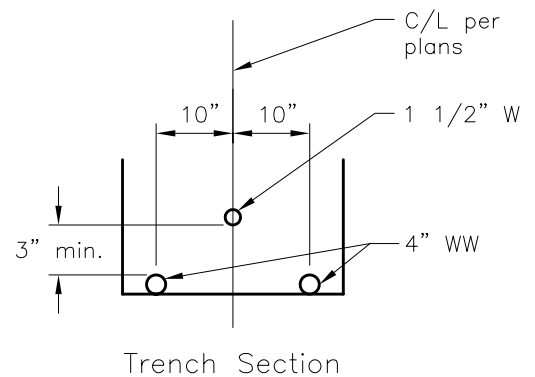
PUBLIC WORKS DEPARTMENT

Dual Water & Wastewater Service



Notes:

1. This Std plan is to be used primarily in residential subdivisions on lot lines opposite the utility joint trench. A utility coordination plan showing service locations is required.
2. See Std Plans 201, 203, 403, and 412 for materials and installation details.



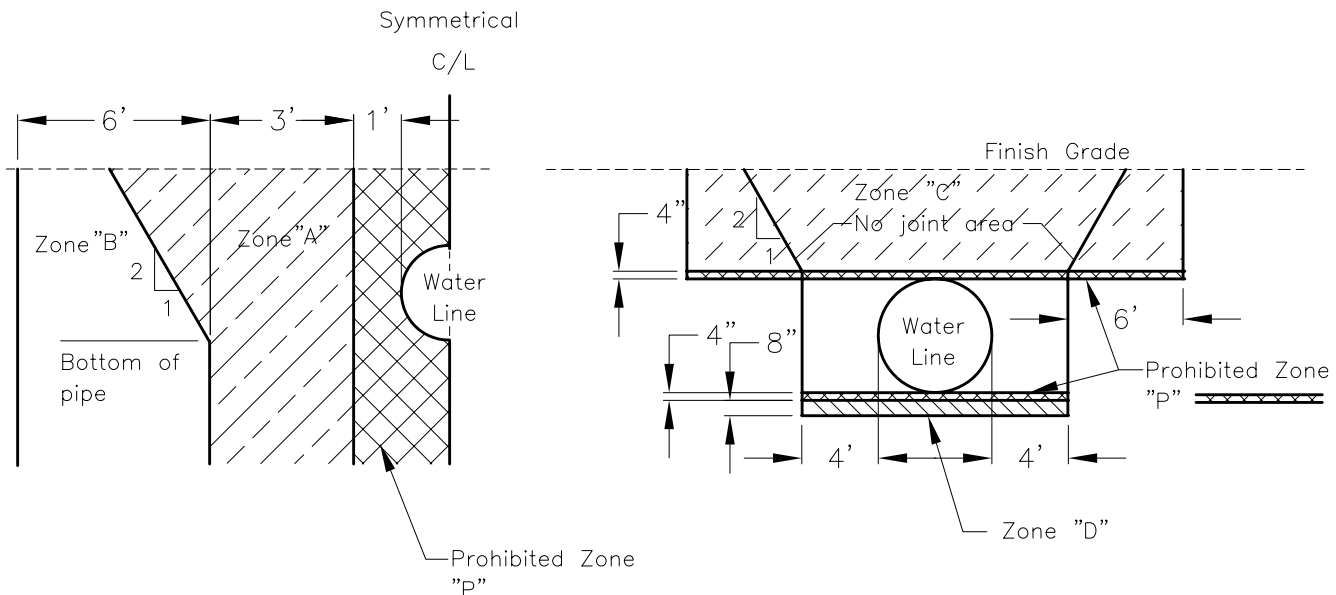
Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS					<i>F. Wally Sangelin</i>	414
Date 12/00					City Engineer R.C.E. 39895	12/28/00 Date



CITY OF LODI

PUBLIC WORKS DEPARTMENT

Water Main Separation from Sanitary Hazard—New Wastewater Line Construction



CASE 1
New Wastewater Line
Parallel Construction

CASE 1
New Wastewater Line
Crossing

WASTEWATER LINE CONSTRUCTION REQUIREMENTS ZONE

A	B	C	D	P
Requires specific approval of the City Engineer details on plans	Pipe: ESVC, bell & spigot joint only; PVC water pipe; Ductile Iron pipe. (Storm Drain only—Conc. Pipe)	Pipe: Ductile Iron or Class 200 PVC water pipe centered over water main. Note the "No Joint" area over water main	Pipe: Same as Zone C, no joints allowed	Prohibited—No new wastewater line in this area

Notes:

1. This Standard Plan shows normal construction requirements/options for reduced separation of existing water mains from new sanitary sewers and storm drains (including mains & laterals). It does not apply to pipes over 24 inches in diameter, to force mains or to services crossing under a water main (see Note 3). See State Dept. of Health Services Standards for other situations and additional alternatives.
2. Plans shall reference this Standard for specific locations and shall note the zone and construction requirement, or provide details on the plans.
3. Sanitary sewer services crossing under water mains shall maintain 4" minimum clearance.
4. All pipe materials and installation shall be per City of Lodi Design Standards and Construction Specifications.

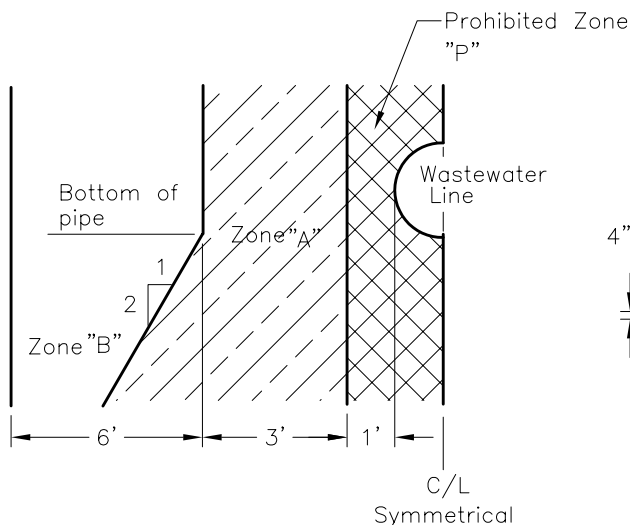
Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS					<i>F. Wally Sandelin</i>	415A
Date 12/00					F. Wally Sandelin City Engineer R.C.E. 39895	12/28/00 Date



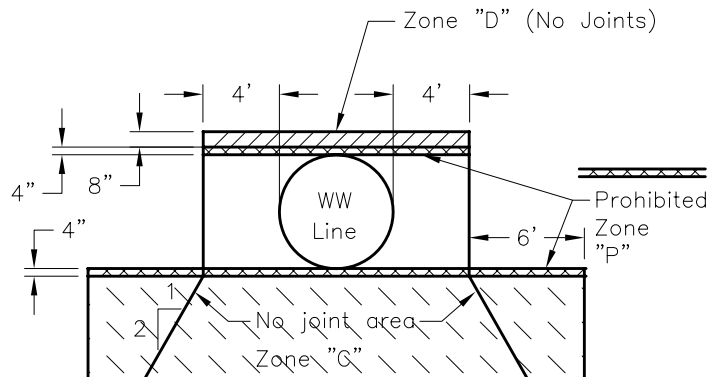
CITY OF LODI

PUBLIC WORKS DEPARTMENT

Water Main Separation from Sanitary Hazard—New Water Main Construction



CASE 2
New Water Line
Parallel Construction



CASE 2
New Water Line
Crossing

WATER MAIN CONSTRUCTION REQUIREMENTS

ZONE

A	B	C	D	P
Requires specific approval of the City Engineer with details shown on the plans.	Pipe: Ductile Iron pipe; PVC, Class 200. Normal pipe standards apply if wastewater line meets Zone B requirements per Std. Plan 415A.	Pipe: Per Zone B Note "no joint" area under Wastewater line. Normal pipe standards apply if wastewater line meets Zone B requirements per Std. Plan 415A.	Pipe: Per Zone B No joint allowed. Normal pipe standards apply if wastewater line meets Zone B requirements per Std. Plan 415A.	Prohibited — No new water mains in this area.

Notes:

1. This Standard Plan shows normal construction requirements/options for reduced separation of new water mains from sanitary sewers (including services, see Note 3) and storm drains (including mains & laterals). It does not apply to pipes over 24 inches in diameter or to force mains. See State Dept. of Health Services Standards for other situations and additional alternatives.
2. Plans shall reference this Standard for specific locations and shall note the zone and construction requirement, or provide details on the plans.
3. Water mains crossing over services shall maintain 4" min. clearance.
4. All pipe materials and installation shall be per City of Lodi Design Standards and Construction Specifications.

Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS					<i>F. Wally Sandelin</i>	415B
Date 12/00					City Engineer R.C.E. 39895	12/28/00 Date

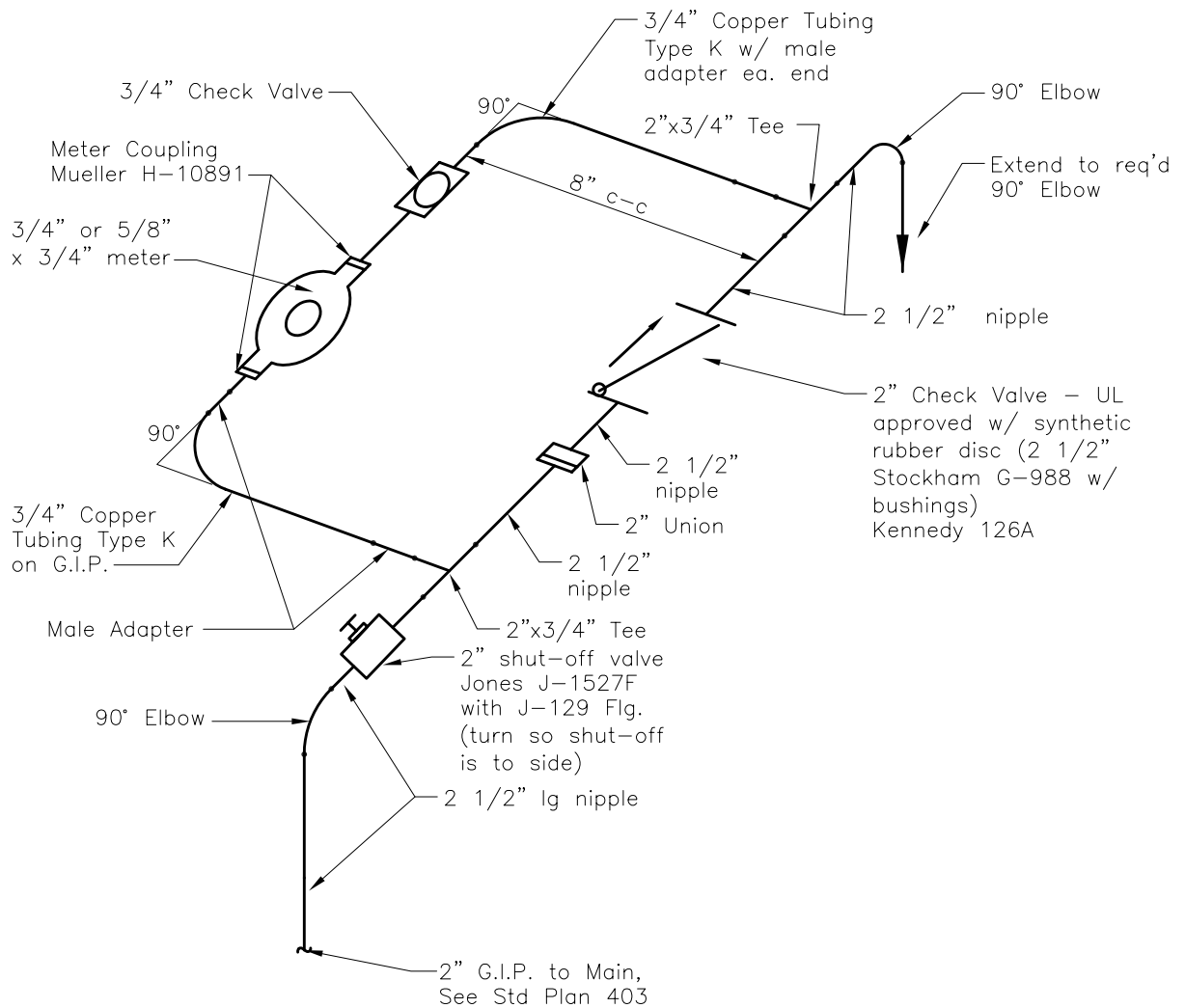


CITY OF LODI

PUBLIC WORKS DEPARTMENT

2" Fire Sprinkler Service

Establish for use of Copper Tubing Type K or G.I.P.



Notes:

1. Use Christy B-48 box with traffic lid per Std Plan 403. Center over fittings.
2. City service responsibility is from main to shut-off valve.
3. Meter to be Sensus SR. Support w/ brick.
4. Where Sprinkler system contains chemical additives or other possible contamination exists, Check Valves shown shall be replaced with Double Check Valve Assemblies per Std Plan 411.

Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS					<i>F. Wally Sandelin</i>	416
Date 12/00					F. Wally Sandelin City Engineer R.C.E. 39895	12/28/00 Date